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Abstract

TECHNIQUES AND ECONOMICS OF RADIOACTIVE WASTE TREATMENT

T. G. HUGHES *
B. F. WARNER *
D. W. CLELLAND *

An outline is given of the systems which have been used at the U.K.A.E.A., Windscale site in Cumberland for the treatment of radioactive liquid wastes arising from two major reprocessing plants.

The source, quantity, activity and composition of the various waste arisings at Windscale are given and a comparison is made of the wastes arising from the first and second reprocessing plants. The arisings and treatment systems are categorised for description and discussion according to their activities as "highly active", "medium active" or "low active".

In general the effectiveness of the various methods which have been employed are discussed and the main considerations which contribute to safety and economy are emphasised. The main improvements in the waste systems which have recently been made during the construction of the second reprocessing plant at this site are indicated.

A section on highly active wastes describes the existing facilities at Windscale for their concentration and storage, mentions the main limiting features of the present plant, points out the main problems associated with the more highly active wastes which will arise from the U.K. Civil Power Programme and indicates present plans for dealing with future wastes of this type.

Sections of the paper dealing with medium and low active wastes describes the systems which have been operated at Windscale and indicate how recent changes have made the systems more effective and economical.

Progressive development of waste handling techniques at Windscale has, without reducing safety standards, resulted in increased efficiency and greater economy in operation.

* U.K. Atomic Energy Authority, Production Group, Windscale